

REMARKS

Claims 1 - 5, 7 - 11 and 29 - 38 are pending. Examiner has indicated that claims 9 - 11 are allowable and has finally rejected claims 1 - 8 and 29 - 38. Claims 1, 7, and 36 have been amended herein. Claim 6 has been canceled. Applicants respectfully request reconsideration of the final rejection of these claims in light of the following comments. These comments could not have been provided earlier in prosecution because the Ha reference has not been previously asserted against the pending claims.

All pending claims were rejected as being unpatentable over Ha (Paper cited by Applicants) in view of Lowrey (U.S. Patent 6,673,648).

Claim 1 has been amended to incorporate the limitation of (now canceled) claim 6 that "the phase change material and the thin conductive film are not relatively superjacent or subjacent." As Examiner will appreciate, not superjacent requires being not "above", and not subjacent requires being not "below." Ha does not teach or suggest this limitation, because Ha teaches that the phase change material is formed over the thin conductive film. While Ha teaches that the phase change material is formed in a trench structure adjacent a sidewall of the bottom electrode (Ha at page 175, column 1, last paragraph), the figures of Ha clearly demonstrate that the phase change material overlies, *i.e.*, is "superjacent" that bottom electrode. See Figures 1(a), 1(b), 3, and 4 of Ha.

Note that Figures 3 and 4 are the structure described in the portion of Ha relied upon by Examiner. These figures clearly reveal, however, that the phase change material is superjacent the thin conductive film. Nothing in Ha teaches or suggests a structure where the phase change material is neither superjacent nor subjacent the thin conductive film. Lowrey cannot overcome the shortcoming of Ha because Lowrey clearly teaches that the thin conductive film 18 is completely superjacent the phase change material 20 (see Figure 3 of Lowrey). For at least these reasons, claim 1 is now allowable over Ha,

alone or in combination with Lowrey. Claims 2-5 and 7-8 are also patentable over Ha by virtue of their dependence from claim 1 as well as for their further defining limitations.

Claim 29 recites that “the conductive element being a thin film of a conductive material that does not overlap, and extends away from, the phase change material layer” (*emphasis added*). By contrast, each figure in Ha demonstrates that the conductive film of Ha (notated as BE) clearly overlaps with the phase change material (notated as GST). Figures 1(a), 1(b), 3, and 4 reveal that Ha teaches substantial overlap between the thin conductive film and the phase change material. As such, Ha fails to teach or suggest the claim limitation that the conductive material “does not overlap” the phase change material layer. As discussed above, Lowrey clearly teaches substantial overlap between thin conductive film 18 and phase change material 20 (see Figure 3 of Lowrey). For at least these reasons, claim 29 is patentable over Ha, alone or in combination with Lowrey. Claims 30 – 35 are also patentable over Ha by virtue of their dependence from claim 29 as well as their further defining limitations.

Claim 36 has been amended to recite, “the layer of phase change material neither overlies no underlies the thin conductive film.” As has been discussed above, Ha fails to teach or suggest such a limitation. Ha clearly demonstrates that the phase change material (notated as GST in the figures) substantially overlies the thin conductive film (notated as BE in the figures). In each illustration of the disclosed structures – Figures 1(a), 1(b), 3, and 4 – the phase change material is demonstrated as overlying the thin conductive film. Furthermore, Lowrey clearly teaches that phase change material 18 substantially underlies thin conductive film 18 (see Figure 3). For at least these reasons, claim 36 is allowable over Ha, either alone or in combination with Lowrey. Claims

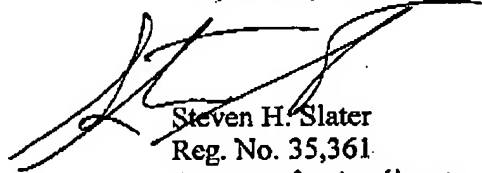
37- 38 are also allowable over Ha by virtue of their dependence from claim 36 as well as their further defining limitations.

Reconsideration and withdrawal of the final rejection is respectfully requested.

No fee is believed due in connection with this filing. However, in the event that there are any fees due, please charge the same, or credit any overpayment, to Deposit Account No. 50-1065.

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Respectfully submitted,



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